

Appl. No. 10/772,077
Amdt. Dated September 28, 2005
Reply to Office Action of June 30, 2005

Attorney Docket No. 88519.0003
Customer No.: 26021

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently amended) A ZnO system semiconductor device comprising one or more layers of n-type layer and p-type layer respectively, characterized in that at least one layer of said p-type layers is (are) formed of a Zn-polar ZnO system semiconductor film doped with nitrogen atoms, such that the thin film growth direction of said Zn-polar ZnO system semiconductor film is conformed to the direction of Zn polarity (0001), and the underlying layer at the time of formation of said Zn-polar ZnO system semiconductor thin film is Zn-polar MgZnO or Ga-polar GaN thin film.

2. (Currently amended) ~~The A ZnO system semiconductor device according to claim 1 comprising one or more layers of n-type layer and p-type layer respectively, characterized in that the underlying layer at the time of formation of said Zn-polar ZnO system semiconductor thin film is a Ga-polar GaN system thin film, a Zn-polar ZnO substrate or Zn-polar MgZnO thin film~~ at least one layer of said p-type is (are) formed of a Zn-polar ZnO system semiconductor film doped with nitrogen atoms, such that the thin film growth direction of said Zn-polar ZnO system semiconductor film is conformed to the direction of Zn polarity (0001), and a composition of said Zn-polar ZnO system semiconductor film is ZnCdO, ZnMgO, ZnCdMgO, ZnOSe, or ZnOS.

3. (Currently amended) ~~The A ZnO system semiconductor device according to claim 1 comprising one or more layers of n-type layer and p-type layer~~

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respectively, characterized in that nitrogen atom concentration of said Zn-polar ZnO system semiconductor thin film is $1 \times 10^{20} \text{cm}^{-3}$ or more that at least one layer of said p-type layers is (are) formed of a Zn-polar ZnO system semiconductor film doped with nitrogen atoms, such that the thin film growth direction of said Zn-polar ZnO system semiconductor film is conformed to the direction of Zn polarity (0001), and a composition of said n-type layer is Zn(OS), Zn(OSe), Zn(OTe), Zn(OSSe), Zn(OSeTe) or Zn(OSTe).

4. (Currently amended) The ZnO system semiconductor device according to claim 1, 2, or 3 characterized in that nitrogen atom concentration of said Zn-polar ZnO system semiconductor thin film is $1 \times 10^{20} \text{cm}^{-3}$ or more.